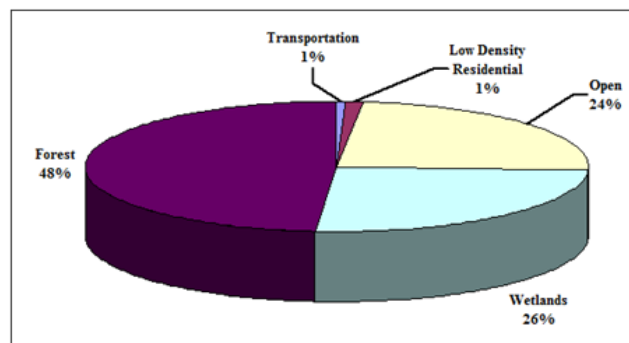


Waterbody: West Black Creek



Basin: Ochlockonee River

West Black Creek is a minimally disturbed, phosphorus-limited stream located in southwestern Leon County. The stream flows west, eventually reaching the Ochlockonee River downstream of Lake Talquin.

As the following pie chart shows, residential and transportation uses make up approximately 2% of the 5,595 acre watershed. Increases in stormwater runoff, and waterbody nutrient loads can often be attributed to this type of land use.

Background

Healthy, well-balanced stream communities may be maintained with some level of human activity, but excessive human disturbance may result in waterbody degradation. Human stressors may include increased inputs of nutrients, sediments, and/or other contaminants from watershed runoff, adverse hydrologic alterations, undesirable removal of habitat or riparian buffer vegetation, and introduction of exotic plants and animals. Water quality standards are designed to protect designated uses of the waters of the state (*e.g.*, recreation, aquatic life, fish consumption), and exceedances of these standards are associated with interference of the designated use.

The creek was verified impaired by the Florida Department of Environmental Protection (FDEP) in 2008, and received a Total Maximum Daily Load (TMDL) for fecal coliforms that same year. The TMDL establishes the allowable loadings to the creek which would restore the creek to applicable water quality thresholds. In this case, fecal coliforms would have to be reduced by 33% to meet the criterion of fecal coliforms not exceeding 400 Most Probable Number (MPN) in 10 percent of the samples.

Methods

Surface water sampling was conducted to determine the health of Black Creek and met the collection and analysis requirements of FDEP.

Results

Nutrients

The nutrient thresholds and results are found in Table 1. According to FDEP requirements, Numeric Nutrient Criteria for phosphorus and nitrogen (expressed as an annual geometric mean) cannot be exceeded more than once in a three year period. While the State criteria were not exceeded for either parameter, the 2014 nitrogen level was the highest recorded during the period of record.

Table1. FDEP's total nitrogen and phosphorus criteria for streams applied to West Black Creek.

West Black Creek	Total Nitrogen Threshold 1.03 mg/L	Total Phosphorus Threshold 0.18 mg/L
2006	0.15	0.01
2007	0.41	0.01
2008	0.29	0.02
2009	0.29	0.01
2010	0.34	0.02
2011	0.34	0.02
2012	0.38	0.02
2013	0.18	0.02
2014	0.53	0.02

Fecal Coliforms

As mentioned previously, FDEP has set a TMDL for West Black Creek. While fecal coliform levels were elevated above the 400/100 mL Class III limit in 18% of the samples for Class III waters (Figure 1), there has been only one exceedance since 2008 (February 2012). Since the watershed is relatively undeveloped, the high fecal levels could be the result of wildlife in the area. FDEP is currently in the process of revising their bacterial standards. It is hoped that the proposed indicator organism (*E. coli*), along with

microbial source tracking, can give staff a more reliable indicator and help determine the source of the fecal coliform bacteria.

Other Parameters

Other water quality parameters appear to be normal for the area and no impairments were noted.

Conclusions

Based on ongoing sampling, West Black Creek met the nutrient thresholds for the East Panhandle Region. Fecal coliforms have been elevated in the past, but there were no water quality exceedances since the first quarter of 2012. Other water quality parameters appear to be normal.

Thank you for your interest in maintaining the quality of Leon County's water resources. Please feel free to contact us if you have any questions.

Contact and resources for more information

www.LeonCountyFL.gov/WaterResources

[Click here to access the results for all water quality stations sampled in 2014.](#)

[Click here for map of watershed – Sample site 43.](#)

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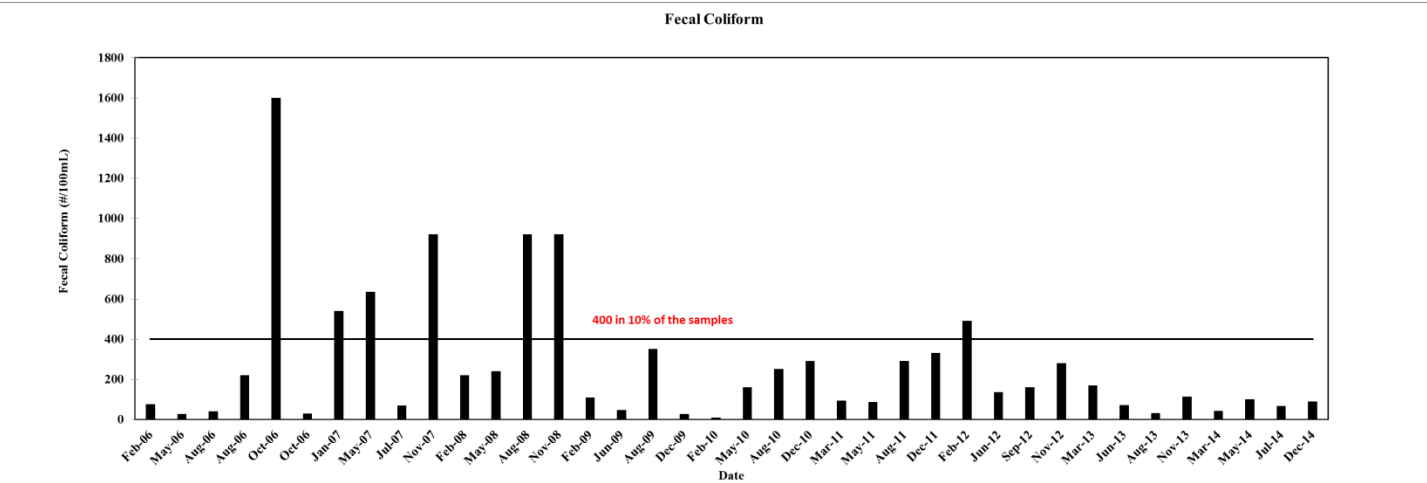


Figure 1. Fecal coliform levels for West Black Creek (2006-2013).